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|--|-------------|----------------------|---------------------------------|-----------------------------|
| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO.            |
| 10/563,100   | 12/30/2005  | Shinya Sonobe        | 5287-0101PUS1                   | 6761                        |
| 2292 7590 01/23/2008<br>BIRCH STEWART KOLASCH & BIRCH<br>PO BOX 747<br>FALLS CHURCH, VA 22040-0747 |             |                      | EXAMINER<br>TAYLOR, EARL N      |                             |
|  |             |                      | ART UNIT<br>2818                | PAPER NUMBER                |
|  |             |                      | NOTIFICATION DATE<br>01/23/2008 | DELIVERY MODE<br>ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

## Office Action Summary

Application No.

10/563,100

Applicant(s)

SONOBE ET AL.

Examiner

Earl N. Taylor

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-15,17-20,22,23,26,27,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-15,17-20,22,23,26,27,29 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date 20071113
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Examiner's Note***

For the purposes of clarity, independent claims 1 and 2 recite limitations only referring to the structure shown and described in Fig. 12(c) and 12(d). The claimed structural limitations of the "semiconductor nitride layer" must be layer (5). The claimed structural limitations of the "second metal film" must be the metal layer (7) and the claimed structural limitations of the "first metal film" must be the multilayer metal film (66) of Fig. 12(c) or the multilayer metal film (67) of Fig. 12(d). The claimed structural limitations of "a film comprising silver or a silver alloy" must be layer (66a) of Fig. 12(c) or (67a) of Fig. 12(d) and the claimed structural limitations of "a metal film that inhibits a reaction with silver" must be layer (66b) of Fig. 12(c) or (67b) of Fig. 12(d).

### ***Claim Rejections - 35 USC § 112 – 1<sup>st</sup> paragraph***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**Claims 5, 6, 8, 9, 14, 15, 17, 18, 22 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the**

**inventor(s), at the time the application was filed, had possession of the claimed invention.**

Claims 5, 14, 22 and 26 recite wherein a nickel film is disposed in a partial area between the silver film and the nitride semiconductor layer. No support or description can be found in the specification regarding this limitation and specifically with regard to the claimed (claims 1 and 2) structure shown in Fig. 12(c) or 12(d).

Claims 6, 8, 15 and 17 recite wherein "the second metal film" comprises a metal that inhibits a reaction with silver at least in the region in contact with the first metal film. The material for the second metal film (7) according to the applicant's specification is platinum (Pt) (par. 114). The list of materials according to the applicant's specification that inhibit or suppress a reaction with silver are Ni, Ru, Os, Ir, Ti, V, Nb, Ta, Co, Fe, Cr and W (par. 19), however, platinum (Pt) is not one of the materials listed as capable of inhibiting a reaction with silver.

Claims 9 and 18 recites the limitation wherein "at least the region of the second metal film ... is formed from nickel". The material for the second metal film (7) according to the applicant's specification is platinum (Pt) (par. 114) and not nickel.

***Claim Rejections - 35 USC § 112 – 2<sup>nd</sup> paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 1-6, 8-15, 17-20, 22, 23, 26, 27, 29 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claim 1 recites the limitation "the first metal" in the last two lines. There is insufficient antecedent basis for this limitation in the claim. It appears that the applicant could mean "the first metal film". The examiner suggests labeling "a metal film" to clearly differentiate from "the first metal film" and "the second metal film".

Claim 2 recites the limitation "the first metal" in the last two lines. There is insufficient antecedent basis for this limitation in the claim. Claim 2 also recites the limitation "wherein the metal film", it is unclear as to which metal film is being referred, the first metal film, the second metal film, or (like claim 1) "the metal film" is part of the multilayer first metal film. The examiner suggests labeling "a metal film" to clearly differentiate from "the first metal film" and "the second metal film".

Claims 10 and 19 recite the limitation "an electrode connected to the nitride semiconductor layer is a second electrode connected to the semiconductor layer of the second conduction type". It is unclear as to whether or not this electrode is the same electrode as that of the independent claim or another different electrode. Does the applicant mean that the electrode of the independent claim is named "a second electrode" and this electrode is connected to the semiconductor layer of the second conduction type or this is another different electrode that is connected to the semiconductor layer of the second conduction type?

Claims 23 and 27 recite the limitation wherein the second metal film is thicker than the first metal film other than the silver or silver alloy film on the sides of the first metal film. It is unclear as to which layer is being compared to with the second metal film, in that the first metal film is the entire multilayer. Does applicant intend to compare "the second metal film" with the thickness of "the metal film" on sides of the silver or silver alloy film or with the thickness of the combination of "the metal film" and noble metal on the silver or silver alloy film?

Claims 29 recite the limitation "the silver film constituting the first metal film"; this language is unclear because the limitations of independent claim 1 state that the first metal film includes the silver film which is part of a multilayer film.

Claims 29 and 30 recite the limitation "the side" in the second line. There is insufficient antecedent basis for this limitation in the claim. It is unclear as to what element the "side" belongs. Does applicant intend to mean that the silver film tapers at edges of the film?

***Allowable Subject Matter***

Claim 1-4, 10-13, 19, 20, 23, 27, 29 and 30 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Telephone / Fax Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Earl N. Taylor whose telephone number is (571) 272-8894. The examiner can normally be reached on Monday-Friday from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on (571) 272-1657. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Application/Control Number:  
10/563,100  
Art Unit: 2818

Page 7

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Earl N. Taylor

A handwritten signature in black ink, appearing to read 'David Vu', with a stylized flourish extending from the end.

DAVID VU  
PRIMARY EXAMINER